

**Notice of Allowability**

Application No.

10/059,149

Examiner


Wai-Sing Louie

Applicant(s)

NAKAMURA, KOJI

Art Unit

2814

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/28/2004.
2. ☒ The allowed claim(s) is/are 12-14 and 16-29.
3. ☒ The drawings filed on 03 January 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**DOUGLAS WILLE**  
**PRIMARY EXAMINER**

### **DETAILED ACTION**

Applicant has amended the claims to overcome the prior art rejection and the claims 12-14 and 16-29 are allowed.

#### ***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance:

The claimed invention is a method of manufacturing a waveguide type optical element, comprising:

- Forming a light absorption layer on a compound semiconductor layer;
- Forming an undoped compound semiconductor layer on the light absorption layer, where the undoped compound semiconductor layer includes a first area, second areas located at both sides of the first area, third areas next to the second areas and fourth areas next to the third areas;
- Removing the undoped compound semiconductor layer in the first area to expose a part of the light absorption layer;
- Forming a clad layer on the exposed light absorption layer, and on the undoped compound semiconductor layer in the second, third and fourth areas;
- Removing the clad layer located on the undoped compound semiconductor layer in the third areas, and the undoped compound semiconductor layer in the third areas;
- Forming an insulating layer on the clad layer; and

- Forming an electrode on the insulating layer.

The prior art of record does not disclose or suggest either in singly or in combination the following limitations and other elements in the claims:

Mannou et al. (US 6,590,918) do not disclose:

- Forming an undoped compound semiconductor layer on the light absorption layer, where the undoped compound semiconductor layer includes a first area, second areas located at both sides of the first area, third areas next to the second areas and fourth areas next to the third areas;
- Removing the undoped compound semiconductor layer in the first area to expose a part of the light absorption layer;
- Forming a clad layer on the exposed light absorption layer, and on the undoped compound semiconductor layer in the second, third and fourth areas;
- Removing the clad layer located on the undoped compound semiconductor layer in the third areas, and the undoped compound semiconductor layer in the third areas.

Kunisato et al. (US 5,990,496) do not disclose:

- Forming an undoped compound semiconductor layer on the light absorption layer, where the undoped compound semiconductor layer includes a first area, second areas located at both sides of the first area, third areas next to the second areas and fourth areas next to the third areas;

- Removing the undoped compound semiconductor layer in the first area to expose a part of the light absorption layer;
- Forming a clad layer on the exposed light absorption layer, and on the undoped compound semiconductor layer in the second, third and fourth areas;
- Removing the clad layer located on the undoped compound semiconductor layer in the third areas, and the undoped compound semiconductor layer in the third areas.

Therefore, the above references do not disclose the claimed invention of present application and claims 12-14 and 16-29 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

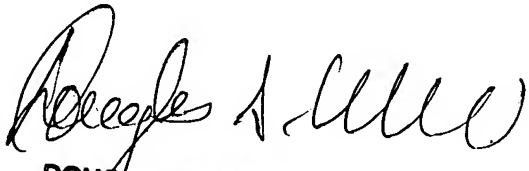
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wsl  
November 24, 2004.

  
**DOUGLAS WILLE**  
**PRIMARY EXAMINER**